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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,455	01/21/2004	Derek J. Dennis	2004_0026	1388

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EXAMINER

FLETCHER III, WILLIAM P

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,455

Applicant(s)

DENNIS ET AL.

Examiner

William P. Fletcher III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03 June 2005 has been entered.

Response to Amendment

2. To clarify the record at this point in the prosecution, claims 10-20 remain pending.

3. With respect to applicant's amendment requiring a (meth)acrylated polyester, this limitation is taught by Moens at, for example 7:25-27 (see below).

Response to Arguments

4. Applicant's arguments, see the submission, filed 03 June 2005, with respect to the rejections under 35 USC 112, 1st Paragraph, set-forth in the Office action mailed 03 February 2005, have been fully considered and are persuasive. Applicant has amended claim 10 to recite a "(meth)acrylated polyester" and, consequently, the above-mentioned rejections have been withdrawn.

5. Applicant's arguments filed 03 June 2005, with respect to the prior art rejections set-forth in the Office action mailed 03 February 2005, have been fully considered but they are not persuasive.

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6. Applicant argues that there is no disclosure or suggestion in either Hyde or Moens that the composition of Moens would be particularly suitable/beneficial for use in the thermographic process of Hyde. The examiner disagrees. While Moens does not disclose using the composition in a thermographic process, *per se*, the exemplary process of this reference involves coating the powder composition over a heat-sensitive substrate, melting, and irradiating to cure. These steps form the basis of *all* thermographic processes, including those disclosed by Hyde and claimed by applicant. Because Hyde and Moens teach the same process steps and because applicant has not specifically pointed out any particular aspect of Hyde's thermographic process that would preclude the use of Moens' composition therein, this argument is not persuasive.

7. Applicant further argues that the fact that Moens' composition exhibits desirable properties, including that it can be used on temperature-sensitive substrates, is insufficient motivation to combine the references with a reasonable expectation of success. The examiner disagrees. The strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. MPEP 2144. Further, the prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. MPEP 2143.02. As set-forth above and in the prior Office action, not only do Hyde and Moens teach the same basic process steps, but both references teach performing these steps on radiation-curable, acrylated polymer powder compositions on temperature-sensitive substrates (i.e.,

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paper). Applicant's broad allegation that no reasonable expectation of success exists is, therefore, insufficient to rebut the *prima facie* case of record.

8. Lastly, applicant's asserts: "There are numerous curable compositions which can be applied to temperature sensitive substrates but it would require undue experimentation to find one which would produce a satisfactory, raised print in the process of Hyde." The examiner's position is that it would have been obvious to one of ordinary skill in the art to modify the process of Hyde so as to utilize, as the radiation-curable, acrylated polymer powder composition, the *specific* composition of Moens. Consequently, this position is noted, but it is not cogent to the rejections of record.

9. Since applicant's arguments are not persuasive, it remains the examiner's position that it would have been obvious to one of ordinary skill in the art to modify the process of Hyde so as to utilize, as the radiation-curable, acrylated polymer powder composition, the composition of Moens. One of ordinary skill in the art would have been motivated to do so by the advantageous lower melting temperature and good flow, film hardness, and solvent resistance disclosed by Moens. Further, because Hyde and Moens both teach applying, melting, and curing radiation-curable, acrylated polymer powder compositions on temperature-sensitive (i.e., paper) substrates, it is the examiner's position that there is a reasonable expectation of successfully substituting the one composition for the other.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

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various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyde (US 5,565,246 A) in view of Moens et al. (WO 01/59021 A1).

13. With respect to claim 10, Hyde teaches a process for forming a heat-resistant raised print comprising the following steps, in the order named:

- (a) applying a wet inked print to a substrate;
- (b) applying a radiation-curable acrylated polymer powder composition to the wet inked print on the substrate, whereby the powder composition adheres to the wet inked print;
- (c) heating the powder to melt temperature, whereby the powder composition flows and fuses with the wet inked print to form a raised, radiation-curable melt; and
- (d) irradiating the raised, radiation-curable melt whereby the raised, radiation-curable melt polymerizes and forms a heat-resistant raised print on the substrate (abstract, 2:37-50; 4:15-16; 8:16-26; and 12:34-48).

14. While Hyde does teach a plasticizer (5:42), this reference does not explicitly state that the plasticizer is a radiation-sensitive, semi-crystalline (meth)acrylated polyester.

15. Moens teaches a radiation-curable, acrylated polymer powder composition. The composition contains a semi-crystalline (meth)acrylated polyester (3:5-15 and 7:25-27,

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for example). Moens' powder composition melt at low temperatures (below 150°C) and possess good flow, film hardness, and solvent resistance (1:1-10 and 9:20-25). Although it is not referred to explicitly as a "plasticizer," because it is a component of the coating composition having a reduced melting point over other such compositions in the art, it functions as a plasticizer according to Biller, as made of record in the prior Office action.

16. It would have been obvious to one of ordinary skill in the art to modify the process of Hyde so as to utilize, as the radiation-curable, acrylated polymer powder composition, the composition of Moens. One of ordinary skill would have been motivated to do so by the advantageous lower melting temperature and good flow, film hardness, and solvent resistance disclosed by Moens. Because Hyde and Moens both teach applying, melting, and curing radiation-curable, acrylated polymer powder compositions on paper substrates, it is the examiner's position that there is a reasonable expectation of successfully substituting the one composition for the other.

17. With respect to claims 11 and 12, Moens further teaches that the coating composition may contain up to 30 wt.-% (meth)acrylated epoxy oligomers (3:13-14 and 7:25-end) and 10-90 wt.-% (meth)acrylated polyester oligomers (3:9-10).

18. With respect to claim 13, Moens discloses the relative wt.-% detailed above, but does not explicitly state that the 50/50 ratio claimed. It is the examiner's position that the relative amounts are result-effective, effecting the melting point and coating characteristics of the power composition. Consequently, absent clear and convincing evidence demonstrating the criticality of the claimed amounts, it would have been obvious to one of ordinary skill in the art to optimize such result-effective variables by routine experimentation (MPEP § 2144.05).

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19. With respect to claim 14, Moens further teaches that the composition may contain photo-initiators (9:bottom).

20. With respect to claim 15, Moens teaches that the semi-crystalline (meth)acrylated polyester is present up to 30 wt.-%.

21. With respect to 16, Moens teaches that the semi-crystalline (meth)acrylated polyester is UV-curable (9:bottom).

22. With respect to claims 17 and 18, both Hyde and Moens teach paper substrates (Hyde, 3:1-5 and Examples; Moens, 12:1-7). Hyde explicitly teaches letterhead stationary (3:3-5).

23. With respect to claims 19 and 20, Moens teaches melting at between 80°C and 150°C (9:20-25).

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,421,814 A (Piazza) is cited as further representative of the state of the art and for an excellent description of a conventional thermographic process at 1:15-39.

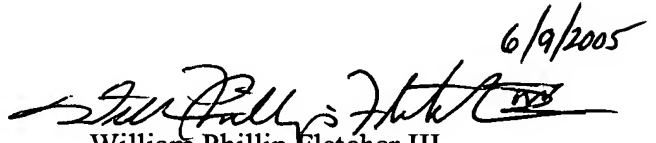
25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William Phillip Fletcher III
Patent Examiner, USPTO
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